NORTH CAROLINA
Department of Transportation

Maintenance Operations and Performance Analysis Report (MOPAR)

Tim Little, PE – Chief Engineer

March 5, 2019

- Strategy
- Effectiveness
- Accountability

Pavements

Expected Average Cycle Time

12-15 Years
Contract Resurfacing

4-7 Year
Pavement Preservation

Contract Resurfacing

System Details	Planned	Completed + Under Contract
Primary (lane miles)	1,903	2,172
Percent Statewide System	5%	6%
Cycle Time (years)	18	16
Secondary (lane miles)	3,189	3,945
Percent Statewide System	3%	3%
Cycle Time (years)	38	31

- Cycle time for the contract resurfacing on the primary system is **16** years and is nearly consistent with industry recommendations
- Cycle time for contract resurfacing on the secondary system is **31** years and exceeds industry recommendations.
- Reaching the recommended cycle time is essential to meeting an expected level of service for our pavement conditions.

Pavements

Expected Average Cycle Time

12-15 Years
Contract Resurfacing

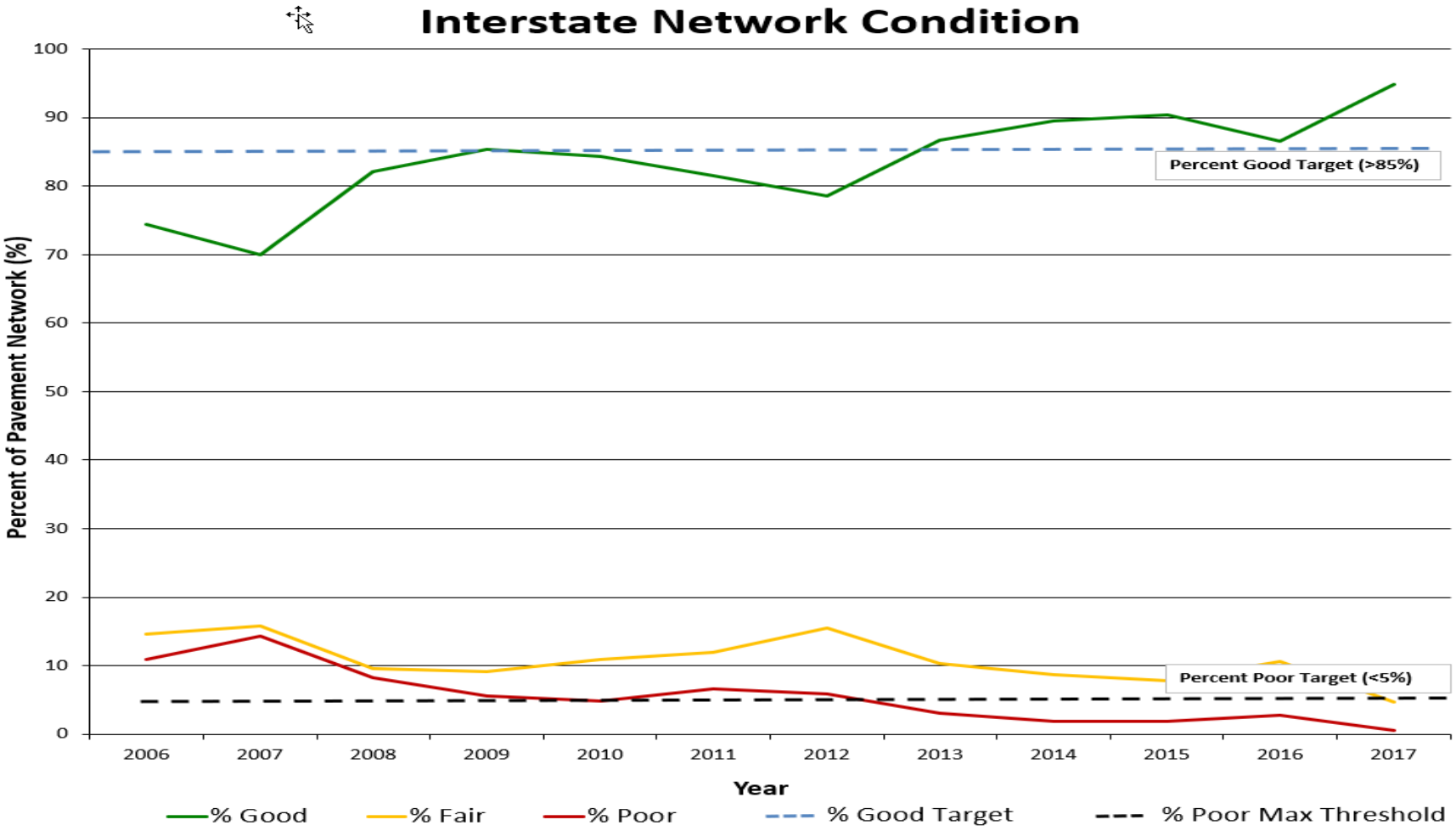
4-7 Year
Pavement Preservation

Pavement Preservation

Pavement Preservation	Planned	Completed + Under Contract
Secondary (lane miles)	4,617	6,348
Percent Statewide System	4%	5%
Cycle Time (years)	27	19

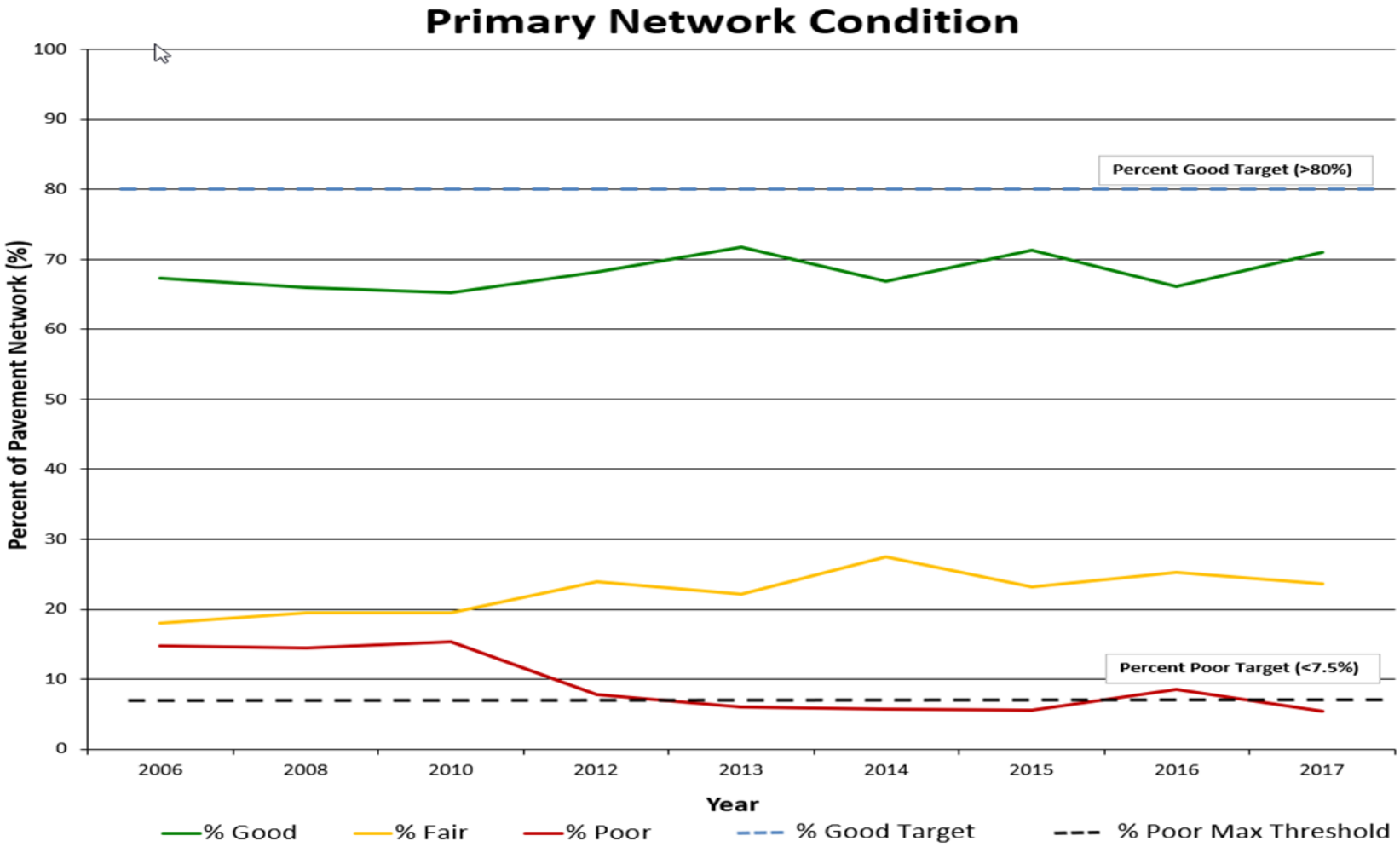
- The current accomplished cycle time for pavement preservation is **19** years, which exceeds industry recommendations

Pavements



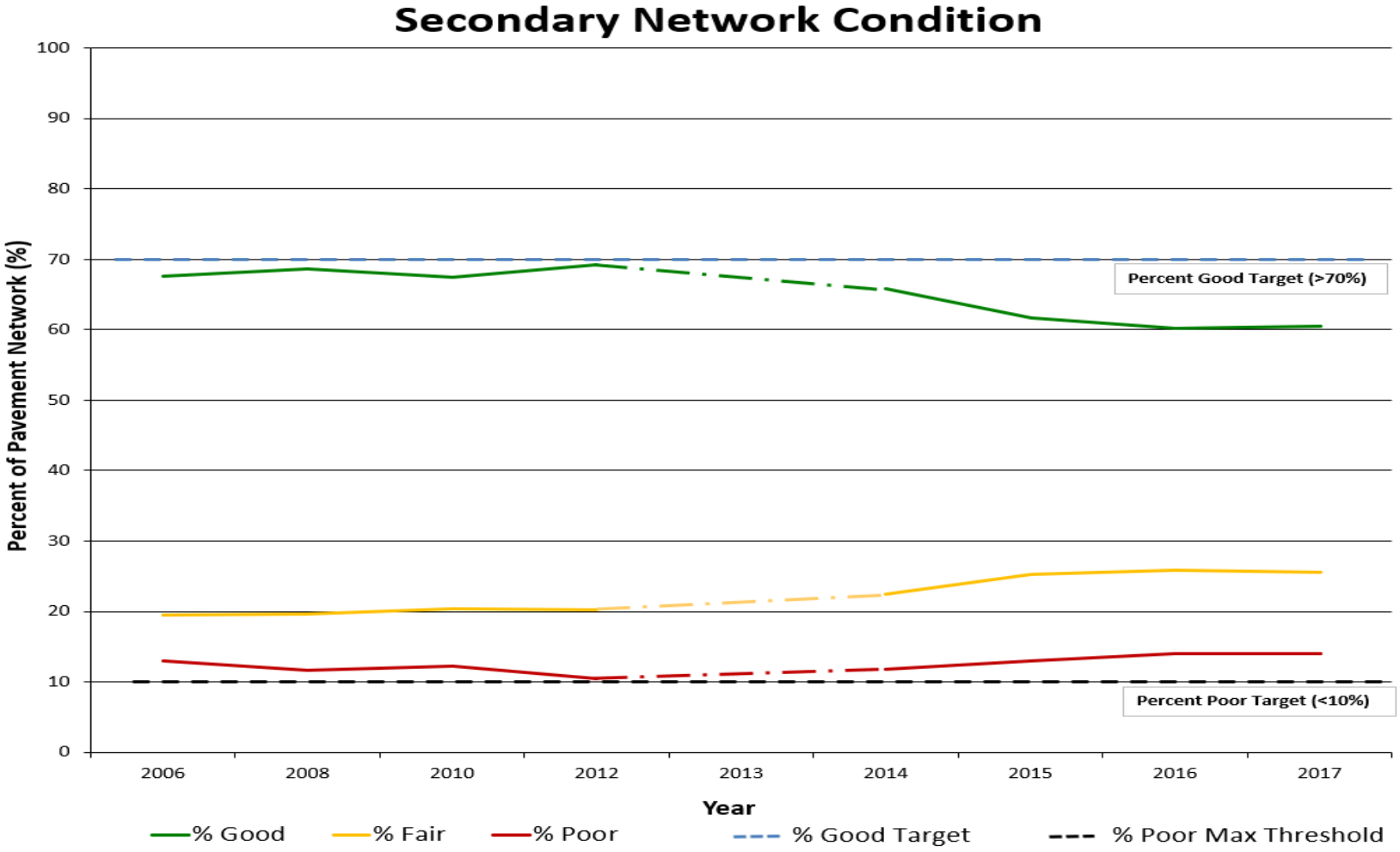
- Interstate System conditions steadily improving

Pavements



- Primary System condition slightly improved

Pavements



- Secondary System condition not improving

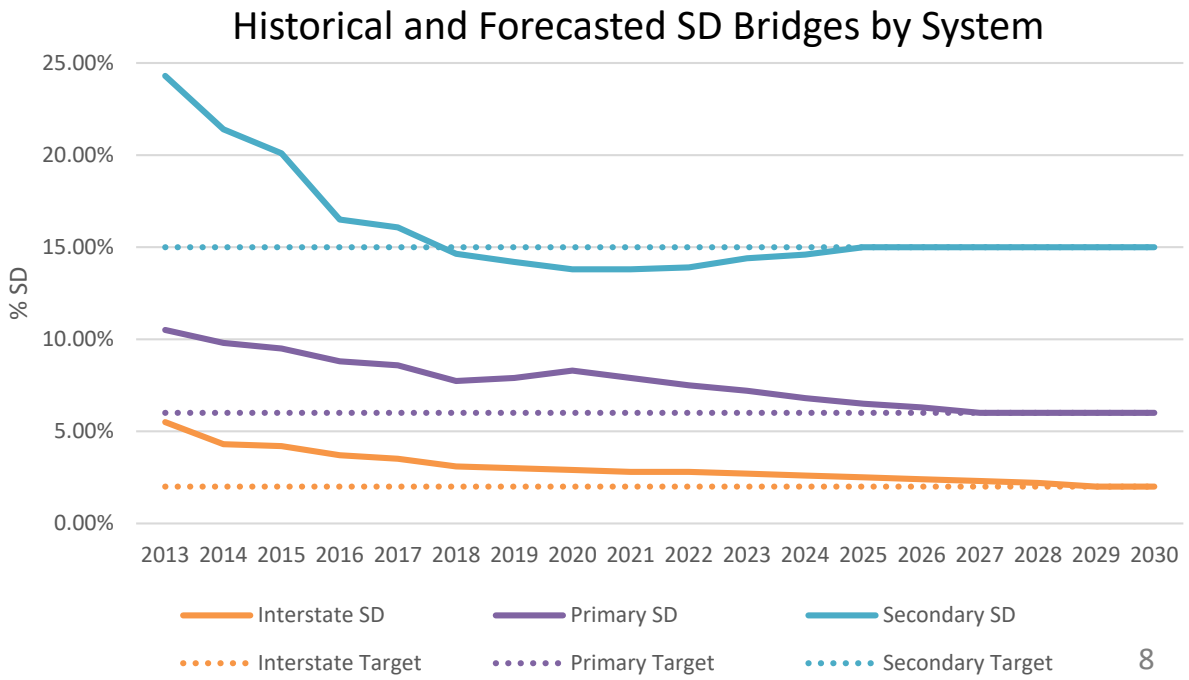
Bridges

SD Bridge
A bridge that is in relatively "poor condition" (e.g. advanced section loss, deterioration or spalling), or has insufficient load carrying capacity.

FO Bridge
A bridge that does not meet current and future traffic needs This can include geometric or load-carrying capacity inadequacies.

% SD Bridges (2015 – Current)

System / Year	SFY 2015	Current	Impact / Change	2030 Goal
Interstate	4%	3%	-1%	2%
Primary	9%	8%	-1%	6%
Secondary	21%	15%	-6%	15%
Statewide (weighted average)	**16%**	**12%**	**-4%**	**10%**



Highway Assets

Highway Assets – FY 2018 Work Accomplished

RMIP Activities / Quantities	Planned Work	Accomplished Work	Percent Accomplished	Cycle Time	Actual Cycle Time (years)
Bridge Joints (LF)	136,206	56,629	42%	7	17
Bridge Pipe (LF)	40,658	39,202	96%	50	52
Brush and Tree (SHM)	95,363	104,656	110%	5	5
Ground Signs (SF)	1,287,250	872,184	68%	20	15
IMAP (HRS)	79,948	132,204	165%	N/A	N/A
Litter (SHM)	151,828	187,331	123%	N/A	N/A
Maintenance Pipe (LF)	277,977	227,894	82%	50	61
Mowing (SHM)	829,330	2,227,699	269%	N/A	N/A
Pavement Markings - Long Life (LF)	22,834,863	28,011,901	123%	10	8
Pavement Markings - Paint (LF)	271,022,729	208,734,859	77%	4	5
Rest Area Maintenance ($)	17,224,098	16,720,571	97%	N/A	N/A
Shoulder and Ditch (SHM)	21,488	19,298	90%	8	9
Traffic Signal Maintenance (EA)	13,406	23,779	177%	N/A	N/A

Highway Assets

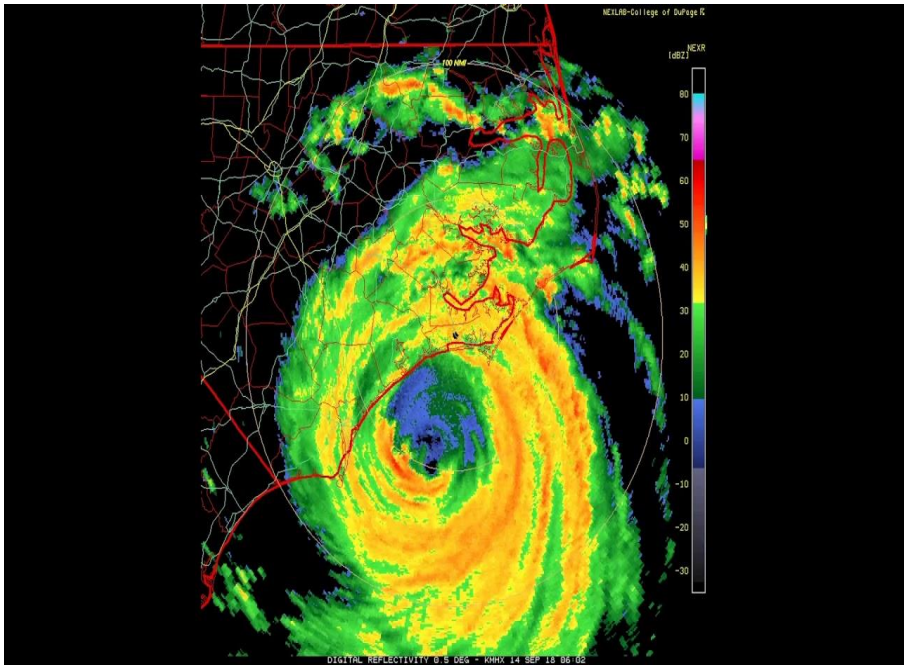
Highway Assets – Roadside Environmental Performance

Major Holiday	Memorial Day	July 4th	Labor Day	Veterans Day/Thanksgiving
Mowing Operations	81%	88%	89%	99%
Litter Management	96%	94%	95%	95%
Guardrails/Signs/Bridges	79%	83%	85%	96%
Statewide Average	85%	88%	89%	97%

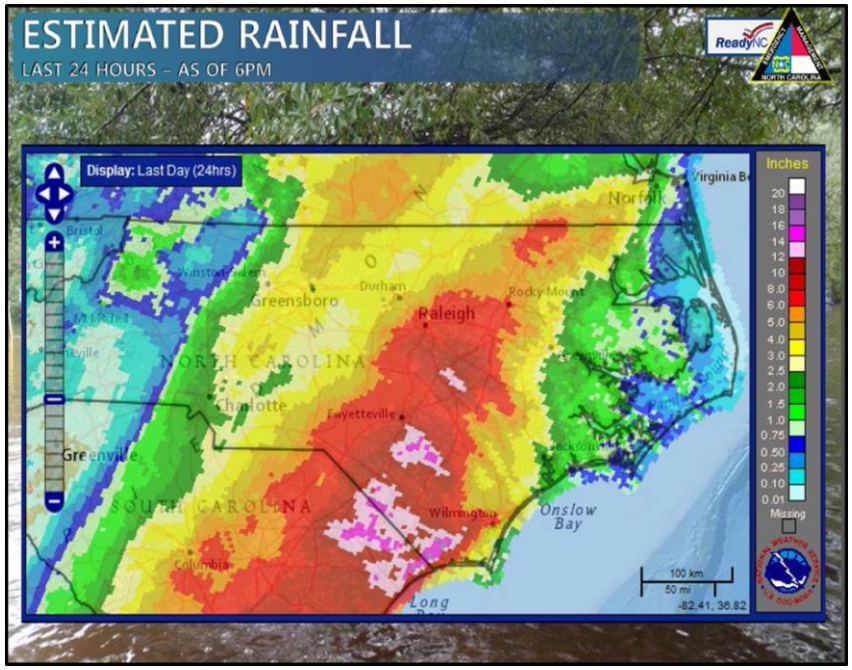
Appropriations and Investment Recommendations

Major Programs	FY19 State Appropriation ($ million)	Investment Recommendation ($ million)
Contract Resurfacing	$504	$519
Pavement Preservation	$98	$110
Bridge Program	$272	$272
Bridge Preservation	$82	$82
Roadside Environmental	$101	$122
General Maintenance Reserve		
Highway Maintenance	$159	$455
Statewide Programs	$150	$150
Subtotal, General Maintenance Reserve	$309	$605
Total	**$1,366**	**$1,710**

Emergency Response/Disasters



Hurricane Florence – September 2018



Hurricane Matthew – October 2016

Financial Recovery

U.S. Department of Transportation
Federal Highway Administration

- Provides reimbursement for damages to Federal Aid routes, typically US, NC, and Interstate routes.
- ~$700,000 DOT Statewide Declaration Threshold for Emergency Reimbursement Eligibility
- $5,000 Minimum project threshold
- Eligible Work:
  - Emergency Repairs (First 180 Days)
    - (100% reimbursement)
  - Permanent Repairs
    - (90% reimbursement on Interstates)
    - (80% reimbursement on other Federal Aid routes)

Hurricane Matthew – NC 904 in Robeson County

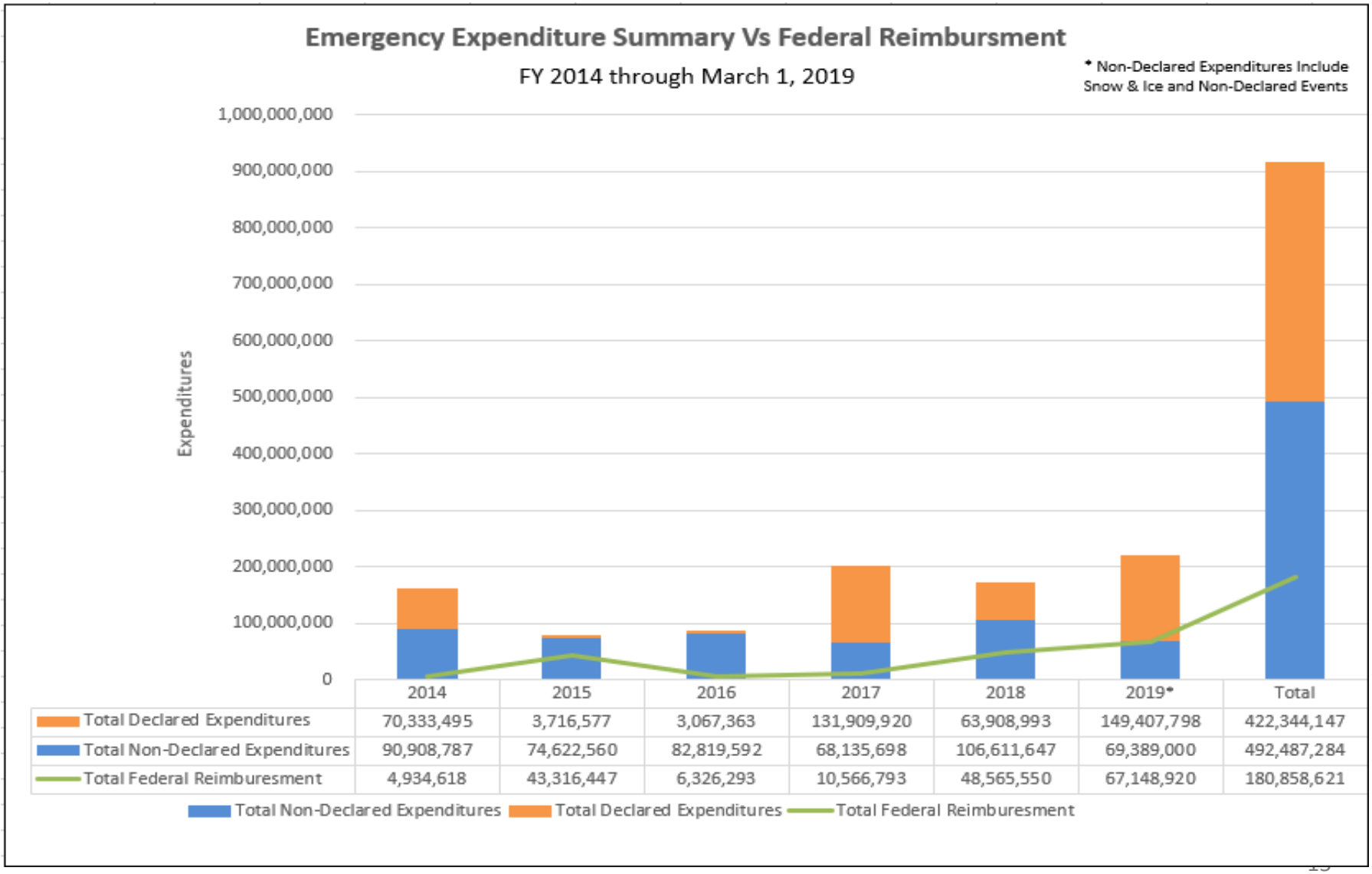
Financial Recovery

FEMA

- Provides reimbursement for damages to state maintained secondary routes.
- ~ $14M Statewide Declaration Threshold for Reimbursement Eligibility
- $3,140 Minimum project threshold
- Eligible Work:
  - Cat A – Debris Removal
    - (~80% reimbursement)
  - Cat B – Emergency Protective Measures
    - (75% reimbursement)
  - Cat C – Roads/Bridges
    - (75% reimbursement)
  - Cat E – Buildings/Equipment
    - (75% reimbursement)

Hurricane Matthew – Benson Road in Harnett County

Emergency Response/Disasters



	2014	2015	2016	2017	2018	2019*	Total
Total Declared Expenditures	70,333,495	3,716,577	3,067,363	131,909,920	63,908,993	149,407,798	422,344,147
Total Non-Declared Expenditures	90,908,787	74,622,560	82,819,592	68,135,698	106,611,647	69,389,000	492,487,284
Total Federal Reimburesment	4,934,618	43,316,447	6,326,293	10,566,793	48,565,550	67,148,920	180,858,621

Emergency Response/Disasters

Events Declared since FY 2014

Declared Events	FEMA Exp	FHWA Exp	Total Exp
Avery/Wilkes Mudslides		4.4	4.4
July 3 - 13 Mudslides	8.9	2.7	11.6
July 27 Mudslides	4.7	0.8	5.5
Hurricane Joaquin		1.5	1.5
March 2014 Winter Storm	31		31
Hurricane Matthew	142.9	57.1	200
Alberto/Western Slides		5.9	5.9
NC Party Rock Fire	0.1		0.1
Hurricane Florence	97.8	28.2	126
Hurricane Michael	11.2	1.1	12.3
Totals	*296.6*	*101.7*	*398.3*

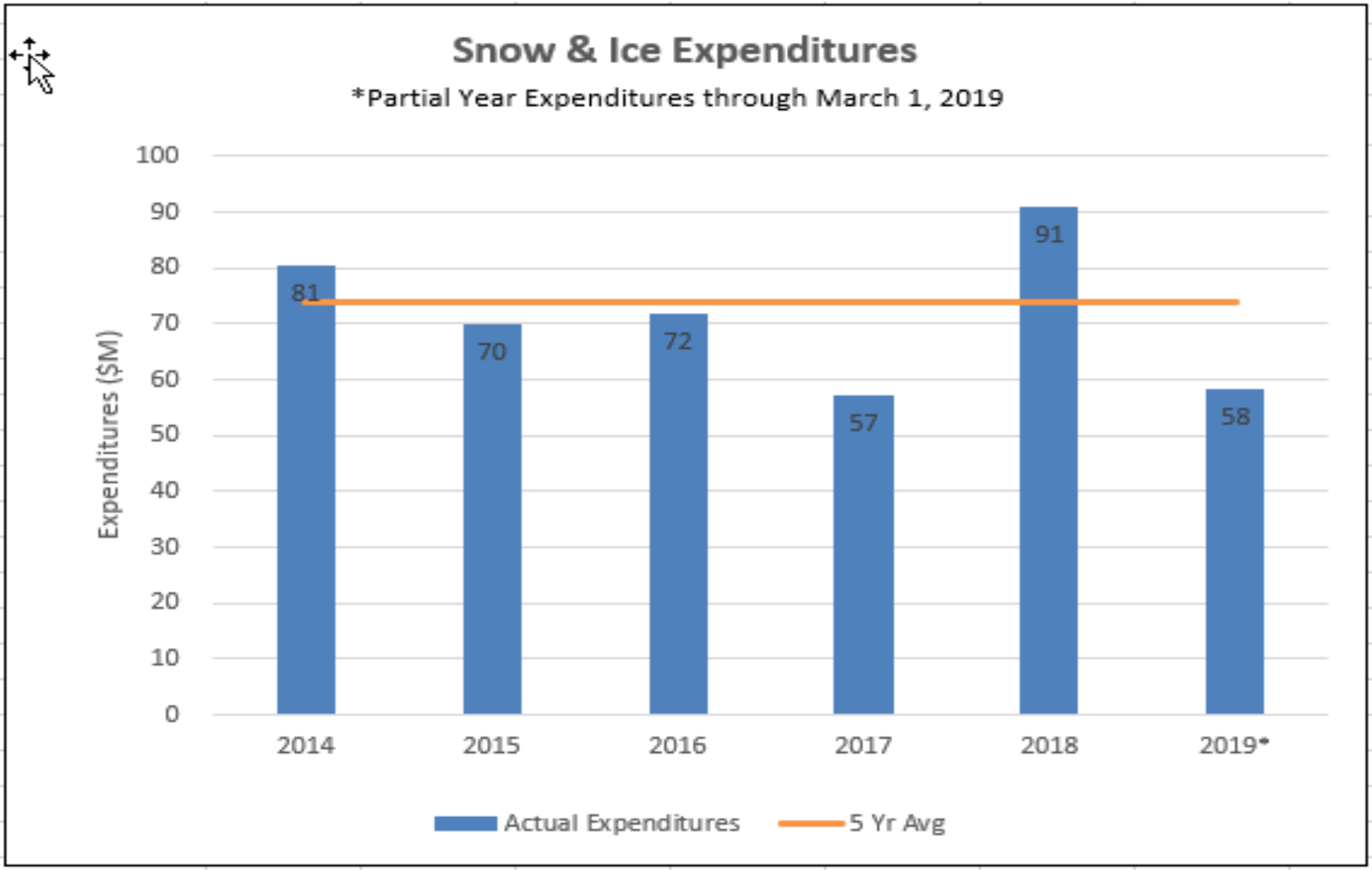
Non-Declared Events since FY 2014

Non-Declared Events	Sec Sys Exp	Pri Sys Exp	Total Exp
Hurricane Aurther	0.8	0.7	1.5
Hurricane Joaquin	4.2		4.2
Hurricane Irma	2.1		2.1
Alberto/Western Slides	14.8		14.8
Feb 2019 Rain Event/Slides			0
Subtotals	*21.9*	*0.7*	*22.6*

Division Events	Sec Sys Exp	Pri Sys Exp	Total Exp
Slope failure, Slides, Sinkholes, etc	4.6	12.4	17
Snow & Ice	116.9	311.5	428.4
Subtotals	121.5	323.9	445.4
Non-Declared Total	*143.4*	*324.6*	*468*

* Expenditures shown are in millions ($M)

Emergency Response/Disasters



* ~$430M in Snow & Ice Expenditures since 2014 (5 Year Avg = ~$75M Annually)


QUESTIONS?